CLAIMS

1. Use of a catalyst for heterogeneous catalysis comprising a β-SiC support and at least one active phase, the said catalyst being obtainable by using a process comprising at least the following steps:

(a) impregnation of the said support having a specific surface area, determined by the BET nitrogen adsorption method at the temperature of liquid nitrogen according to standard NF X 11-621, equal to at least 2 m^2/g and comprising at least one active phase precursor, the said impregnation being done by an impregnation process comprising at least a first impregnation step during which the said support is impregnated at least once by a polar agent A, and a second impregnation step during which the said support is impregnated at least once by an agent B less polar than agent A, knowing that at least agent B comprises at least one active phase precursor,

(b) thermal breakdown of the said precursor,

the said use being as a catalyst for chemical reactions selected among oxidation of methane or other hydrocarbons, oxidation of carbon monoxide, or as a catalyst for depollution of exhaust gases of vehicles with internal combustion engines.

2. Use according to claim 1, characterised in that the said active phase precursor is a metallic compound.

3. Use according to claim 2, characterised in that the metal contained in the said metallic compound of agent A and / or agent B is selected among the group composed of the Fe, Ni, Co, Cu, Pt, Pd, Rh, Ru, Ir elements.

4. Use according to claim 2 or 3, characterised in that the said metallic compound contained in the said agents is either a salt solved in a solvent, or an organo-metallic compound.

5. Use according to claim 4, characterised in that the said organo-metallic compound is either dissolved in a solvent, or used in its pure state.

6. Use according to any one of claims 1 to 5, characterised in that the said support is in the form of balls, fibres, tubes, filaments, felt, extruded materials, foams, monoliths or pellets.

7. Use according to any one of claims 1 to 6, characterised in that the said support has a BET specific surface area more than 2 m^2/g, preferably more than 10 m^2/g, and even better, more than 20 m^2/g.

8. Use according to any one of claims 1 to 7, characterised in that the said support has a BET specific surface area between 1 and 100 m^2/g.

9. Use according to any one of claims 1 to 8, characterised in that the said support comprises macropores with a size between 0.05 and 10 µm, and optionally also mesopores with a size between 4 and 40 nm.

10. Use according to claim 9, characterised in that the said macropores have a size between 0.05 and 1 µm.

11. Use according to one of claims 1 to 10, characterised in that the maximum size distribution of the said macropores is between 0.06 and 0.4 µm, and preferably between 0.06 and 0.2 µm.

12. Use according to any one of claims 1 to 11, characterised in that the impregnation method (a) comprises also at least one drying step after the first and / or the second impregnation step.

13. Use according to any one of claims 1 to 12, characterised in that the impregnation method (a) comprises also at least a preliminary treatment of the support that introduces hydrophobic and / or hydrophilic functions on the surface of the said support.

14. Use according to any one of claims 1 to 13, characterised in that the said precursor at least partially forms a metallic oxide during its thermal breakdown.

15. Use according to claim 14, characterised in that the thermal breakdown of the said precursor is followed by a treatment under a reactive gas.

16. Use according to claim 14 or 15, characterised in that the said treatment under a reactive gas is a reduction treatment.

17. Use according to claim 16, characterised in that the said reduction treatment has been carried out in an atmosphere containing hydrogen H_2.

18. Use according to one of claims 1 to 17, characterised in that the support, which has been dried after the last impregnation step, is calcined under air at a temperature between 200°C and 500°C, and preferably between 300°C and 400°C.

19. Method of impregnation of a β-SiC support with a specific surface area, determined by the BET nitrogen adsorption method at the temperature of liquid nitrogen according to standard NF X 11-621, equal to at least 1 m^2/g and comprising macropores with a size between 0.05 and 10 μm, and optionally also mesopores with a size between 4 and 40 nm, the said process comprising at least the following steps:

(a) a first impregnation step during which the said support is impregnated at least once by a polar agent A,

(b) a second impregnation step during which the said support is impregnated at least once by an agent B less polar than agent A,

and in which process at least one agent B among the said agents A and B comprises at least one active phase precursor.

20. Method according to claim 19, characterised in that the said support has a specific surface area equal to at least 10 m^2/g.

21. Method according to claim 20, characterised in that the average size of the said macropores of the said support is between 0.05 and 1 μm.

22. Method according to claims 19 to 21, characterised in that the maximum value in the distribution of the said macropores by size is between 0.06 and 0.4 μm, and preferably between 0.06 and 0.2 μm.

23. Product that can be obtained using the method according one of claims 19 to 22.